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ABSTRACT

Henry Marshall Tory's role in influencing the establishment of provincial universities in Western Canada is traced. The following periods are discussed: Tory and McGill University in the 1890's, the University of Toronto Act in 1906, Tory and University of Alberta from 1906, and Tory in Ottawa in 1928 and 1938. In following the development of Tory's mind, there is a slow shift to a position where faith and knowledge have become distinct and a sense of pastoral mission has been replaced by a more diffuse humanistic concern. During the course of two decades while he was at Alberta University, the aim of the classical curriculum (the training of mental and moral faculties) was pushed more and more into the background by diverse scholarly and professional goals. Scientific method, whether by laboratory experiment or by empirical technique, came into prominence. What made the Canadian experience unique was its uniformity: starting from a few small institutions with practical goals, the course of secularization was determined by utilitarian and manpower requirements. The new aims did not exclude intellectual pursuits, but they discouraged broadly-based education for personal development (i.e., the liberal arts ideal). It is suggested that the religious but practical origins of English Canadian universities and the relative rapidity of their secularization combined to give rise to a homogeneous idea of what a university should be and do. One reinforcement was the need to justify public funding (or elicit generous private support at McGill University and Dalhousie University). A bibliography and enrollment and financial data from 1870 to 1970 are appended. (SW)

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H. M. Tory and the Secular University

Contents

Introduction	1
Tory and McGill, 1890's	2
The University of Toronto Act, 1906	5
Tory and Alberta, 1906 and after	6
Tory in Ottawa, 1928 and 1938	11
The Cash Value of Secularization	15
Discussion	18
Appendix	
Yardsticks, 1870-1970	20
Notes	26

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Introduction

Around the turn of this century higher education in Canada began to change rapidly and radically from God-centred preparation for life to job-oriented mastery of factual knowledge. The ends of education shifted because vocational opportunities were much enlarged by social change and the content of education was transformed by the intertwining of scientific method and professional practice. Two institutions, McGill University and the University of Toronto, provided leadership for these new goals by very different means, the first relying on private endowment and internally-set priorities, the second on government support and public accountability. Among other institutions existing in English Canada at that time, Queen's and Western Universities took the Toronto road and Dalhousie had moderate success with McGill's course, while several others struggled on as small denominational colleges. However, it was in the West that the new pattern based on Toronto took hold most firmly.

The man who initiated that establishment of provincial universities in the West was Henry Marshall Tory. His major achievement was the shaping of the University of Alberta, for which he drew from his academic experience of McGill and to which he adapted the structure of the provincial university at Toronto. The University of Alberta itself acted like a template for the West. Tory's own life was a composite of Canadian regionalism: youth in Nova Scotia, middle years at Montreal, maturity in the West and senior years at Ottawa. Frequent travels and wide reading exposed him to cross-currents of ideas and ideals from Europe and the U.S. Moving one step ahead of most of his contemporaries, he yet belonged sufficiently to his time to be representative of change. His activities provide a guide to the emergence of secular universities in Canada and his thoughts yield glimpses of the movement from religious to secular aims.

Increasing size accompanied the shifts in aims, content and structure of higher education. The quantitative measures of enrolments, degrees and finances mirror the qualitative transformation during the first quarter of the twentieth century. Rates of change in these measures were of an order matched only in the recent boom years. It is very widely believed that the universities remained static until the postwar period and that public funding became significant only with their recent growth. To correct these misconceptions and to provide a ready reference for quantitative changes to which I allude in the text, I have appended a section on enrolments and finances spanning the century from 1870 to 1970.

Until the close of the nineteenth century higher education was rooted in

religion; hence discussion of university purposes was seldom far from appeal to God's purpose, about which the several denominations differed among themselves. The denominational institutions reflected not only doctrinal aims but also the social aims of their supporting constituencies. While all shared the goal of training their clergy, Anglicans aimed at attracting social elites and Presbyterians at generating a professional class, whereas Methodists and Baptists were disposed to serve the whole community[1]. In the case of Catholic colleges recruitment for the priesthood and the provision of pastoral care were dominant objectives[2]. Even "undenominational" universities served denominational majorities, e.g., Presbyterian in the cases of McGill and Dalhousie. The expansion of science and science-based professions acted as a solvent of religious ties and, at the same time, placed demands on the state, a process which it is convenient to call "secularization".

Tory and McGill, 1890's

Henry Marshall Tory enrolled as an undergraduate at McGill University in 1886 at the age of 22 to train for a Methodist ministry. Apart from some rudimentary instruction in a rural school he was largely self-taught. A chance meeting had diverted him from Mount Allison. McGill was by then at the forefront of Canadian higher education, and, in the words of Stanley Frost, "anglophone, protestant, professional." That McGill was to be anglophone had never been much in doubt, but its founders had hoped to interest Christians of all denominations in its work. By mid-century the francophone community had lost interest in an institution which ignored its language and did not favour its religion. If McGill was to survive without public funding it would have to look for support from all English Montrealers and to Canadians generally by appealing broadly to Protestants and their career aims. William Dawson's appointment as Principal in 1855 was at once a confirmation of these intentions and a break with tradition. He was a scientist, a layman and a colonist from the Maritimes. It was on the strength of his reputation as a scientist and educational reformer (of Nova Scotian schools and in Ryerson's footsteps) that objections to the other handicaps had been overcome. Both inclination and circumstance impelled Dawson to drive McGill towards scientific and professional eminence. His steadfast policy of putting new money into new ventures and the ambition of McGill's wealthy benefactors to make "their" university second to none were the reasons why the university had taken the lead.[3] Despite that leadership, the teaching of science was far from adequate as Tory has recorded. "In my own student days at McGill, physics was a lecture subject only, and the only apparatus seen by students other than honour students in mathematics and

physics was that used on the lecture table, which students were not permitted to touch. The teaching staff consisted of one professor for the two subjects, in which astronomy was included, and one part-time lecturer in mathematics."[4] These conditions were about to be ameliorated by William Macdonald's donation of funds in 1890 for new physics and engineering buildings along with chairs in experimental physics and engineering. Now with a department of Applied Science in addition to a faculty of Arts and Science and faculties of Law, Medicine and Veterinary Science, McGill was to all appearances a secular university. And so it was in more than appearance, after making allowance for its mainly Protestant constituency and by comparison with other institutions. But in an important way, religious concerns were still paramount, as can be illustrated in William Dawson's thought. As a geologist and biologist he could not accept Darwin's account of evolution because it replaced God by blind chance and set itself against the Bible. Dawson organized scientific evidence from geology to reject the Darwinian position because his own selection of the science of his day accorded better with the biblical views which for him gave meaning to nature and its laws. Underlying Dawson's rejection of a godless science was a concern that such a science struck at the moral nature of man and hence at the integrated development of mental and moral qualities which was peculiarly the aim of a university.[5] Moreover, religion had a considerable part in the residential life of the university. "Sir William Dawson, an extremely religious man", notes Tory, "had encouraged the religious denominations to build residential colleges in affiliation with the University." Tory himself was no less religious in his McGill years.

After graduation Tory went to Truro to complete his candidature for the Methodist ministry. An offer of a lectureship in mathematics at McGill came during the second year of his appointment to the Nova Scotia Conference from which he was released on finding a substitute. Upon continuation of the McGill appointment for another year, he felt it advisable to bring himself up to date on recent work in mathematical physics. Armed with a letter of introduction from Dawson, Tory put the summer of 1892 to good purpose in the Cavendish Laboratory at Cambridge. (The English universities did not then have any graduate program, and even this arrangement was unusual for the time.) A second summer's stint at Cambridge followed to give him practical experience for setting up laboratries in the new physics and engineering facilities donated by Macdonald, now nearing completion. For an uneventful decade he taught a punishing schedule of mathematics classes and laboratory work to engineering and honours science students, while also becoming increasingly involved in adminis-

trative matters. But that was not all. He was tireless in pastoral care for his students—from inclination not as a duty. In the time left over (and there must have been some),he conducted research which he published in several periodicals. In April 1903 he earned his doctorate in science at McGill and was simultaneously promoted to associate professor rank. Within a year he became involved in the project of establishing a McGill campus in British Columbia, which had been initiated by an alumnus who was a school principal in Vancouver. Tory was sent West as scout, and then to implement the formation of McGill University College of B.C., the forerunner of the University of British Columbia. In the process he encountered every negative element associated with university politics, and thereby matured as an educational statesman. Because of this experience he came to oppose church control of universities.

The opportunity for further studies in divinity was one reason why Tory had accepted his initial appointment at McGill. His duties had swung him instead towards specialization and research in mathematics and physics. But he had retained the Methodist connection as a member of the Montreal District of the Ministry. By the time of the McGill B.C. venture he had begun to chafe at being answerable to the Conference because he had become aware that his calling was in university work and that he would be put into an intolerable situation should the Conference appoint him elsewhere. In May, 1905, he sent a letter of resignation from Vancouver in which he was at pains to point out that he "had not so acted because I feel less interest in that for which the Church of Christ stands, on the contra with every passing year my interest has widened and deepened..." But the immediate cause of his decision was the opposition of the Methodist Church in Vancouver to his McGill mission on the grounds that the Church had already invested in the establishment of a "college" (a high school, in fact) and therefore had prior claim to provincial support. Tory's comment in his unpublished autobiographical draft many years later was still bitter. "That they could expect the Government to listen to such a denominational claim, and in a province with National Schools, supported directly by the state, can only be accounted for by a species of mental aberration due to the development of an abnormal denominational spirit." A year passed. Having not heard from the Montreal Conference, and after another dose of Methodist vituperation, this time from the Methodist General Conference at Toronto upon the passage through the B.C. Legislature of the bill enabling the McGill B.C.venture, he repeated the substance of his first letter and demanded that the matter of his resignation be placed before the Montreal District Conference. His resignation was accepted with an outward show of cordiality. He had not turned his back on the church,

because he encouraged the denominations later to affiliate with the University of Alberta for Theology, but there could be no doubt that from now on he would brook no ecclesiastical interference in education. Why Tory in particular and universities in general shifted to secular aims connects with the rise of engineering as a profession.

The University of Toronto Act, 1906

The teaching of engineering as a university subject in Ontario dates from the early 1890's. The Toronto School of Practical Science was nominally established in 1875, but began its degree program only in 1892. By then the School had only a tenuous connection with the University of Toronto; the School had its own teaching staff and was administered by the provincial department of education.[5] The School of Mining in Kingston began in 1893 under private subscription initiated by Principal Grant and some colleagues at Queen's with tacit approval from Queen's Park. When the Toronto School proposed a course in mining engineering, Grant's objection caused provincial money to flow to the Kingston School as well. By the end of the century an ingenious arrangement enabled Queen's College to benefit from the provincial subsidy for Mining while preserving the status of a Presbyterian institution. Nathan Dupuis, senior science professor, was named Dean of Applied Science while W. L. Goodwin and William Nicol were transferred from the College to the School, the former as Director. Dupuis' title was only nominal because the effective teaching of science as well as engineering subjects was being done within the Mining School, although the degrees were conferred by Queen's. Only amity between Goodwin and Dupuis, aided by Grant's nimble mind and financial deftness, enabled the arrangement to work at all.[7] But it could not last long. Nor was Toronto's arrangement satisfactory, the University attempting to gain control of "its" School from the government. These schools, because of their rapid growth and obvious utility, were objects of contention within and outside the university community. There were also other problems which together were causing a crisis in the University of Toronto.

In early 1905 James Whitney led the Conservatives to a long-awaited victory over the governing Liberals. While both Conservatives and Liberals were alive to the shift of the frontier from agriculture to manufacture in Ontario, the Conservative opposition had been more attuned to urban and industrial signals than the Government. Among Whitney's first actions was the appointment of a commission of reform for the University of Toronto. The Commission, chaired by Joseph Flavelle, reported early next year and by May 1906 the Legislature had

approved a bill incorporating all the major recommendations of the Report. To have resolved within a year an issue which had plagued the community since before Confederation was a remarkable achievement. The Commissioners had been well chosen, given strong guidance and had worked hard. They began their work by asking a score of questions at a dozen North American universities, McGill and Queen's included.[8] Their chief concerns were about structure, financing and control, and it was at state universities that they looked for special guidance because the problem uppermost in their minds was how to eliminate political interference from the affairs of a public university. The arrangements at the University of Wisconsin seem to have attracted them most. The State Governor made appointments to the Board of Regents and the Legislature voted them the funds (then comprising 80% of the University's revenues); the Regents chose and fired the President, but all other appointments went through him. All faculties were represented on Senate which had final authority in academic matters. University finances were dealt with by a committee of the Regents. The main link between these bodies was the President.

The Commissioners adapted these principles to the federated structure of the University of Toronto. They acknowledged the contribution made to the University by the denominational colleges and approved the shared teaching of humanities but re-affirmed that degrees, except in Theology, be conferred only by the University. With regard to professional faculties, the Commissioners gave their blessing to the recently established Faculty of Medicine, recommended that the School of Practical Science be united with the University and that new faculties of Education, Forestry and Household Science be created, but decided in the case of the Ontario Agricultural College that well enough should be left alone. To solve the financial problem, they recommended a grant from the annual succession duties (adopted then but abandoned in 1914 for a much smaller annual grant). These reforms gave the University a sound constitution which a new president, Robert Falconer, would shortly bring to life.[9] The living constitution of Toronto was to serve as the model for new universities.

Tory and Alberta, 1906 and After

The Spring of 1906 was a time of change for Tory. While making the final arrangements for McGill B.C., he not only broke with the Methodist Conference, but embarked on a study of educational costs across the country and wrote to Premier Rutherford of Alberta in an attempt to forestall a repetition of the situation in British Columbia. Tory's letter to Rutherford on March 6, 1906, is one of the most important documents in the history of Canadian universities.

What Tory says about the contemporary scene is pithy and accurate, and his forecast that universities unprepared for scientific work would not amount to much in the future is unusually perceptive. He leaves no doubt that denominational contenticusness is the curse of Canadian higher education. His analysis of the Manitoba situation foreshadows the stalemate of the next dozen years. He dismisses the feasibility of the University of London model (i.e. a collection of autonomous units under an "examining" Senate) in any of the Western provinces (which was confirmed by Manitoba's failure to operate on this model) and then says what he would do in Rutherford's shoes. The letter was obviously persuasive because Rutherford read its suggestions as a blueprint when he asked Tory the following year to be the recommended "first-class man to organize the province's higher work" of which "centralization should be the watchword..." In the year of Tory's appointment to Alberta classes began in rented space. The curriculum was a core of arts and science subjects taught by the initial faculty, all young, whose qualifications are of interest: Classics, W. H. Alexander (Hon.B.A. Toronto, Ph.D. California); English Literature, E. K. Broadus (B.A. Virginia, Ph.D. Harvard); Modern Languages, L. H. Alexander (Hon.B.A. Toronto, Ph.D. Columbia); and Mathematics, W. M. Edwards (B.A. Sc. McGill). Tory, an inveterate traveller, had combed North America to find the right combination of academic talent and dedication to teaching. It is of interest to note that the pattern of graduate work in the U.S. after honours undergraduate Canadian degrees, illustrated by the two Alexanders, had already been established, but that Broadus was among the first of a trickle of Americans coming to teach in Canada. Within five years the skeleton of arts and science had been fleshed out with further appointments and the Faculties of Applied Science, Law, Medicine, Pharmacy and Accounting had been added. With the further addition of Agriculture in 1915, the academic structure of the University of Alberta was as ambitious as those of McGill or the University of Toronto. However, two concurrent initiatives connecting the University and the province, the Extension Department and the Industrial Laboratory, were to prove as significant as the University's academic functions.

In his inaugural address of 1908, Tory lays out his idea of what the university is to be, the general shape it is to take and the conditions to make it work. In the first place, he says, the university serves the intellectual needs of the human spirit. But, he adds, the highest reaches of the creative spirit have arisen out of specific situations, i.e. have never, fortunately, been dissociated from utility. Need has been the cause of the great learned professions, theology, medicine and law, more recently the schools of practical sci-

ence and last, but not least, agricultural schools. Putting these in place is not all. "The modern state university has arisen out of a demand on the part of the democracy, either directly or through those who understand their needs, for a chance of self-realization. The modern state university is specifically a people's institution... Mr. Chancellor, I consider that the extension of the activities of the university on such lines as will make its benefits reach directly or indirectly the mass of the people, carrying its ideals of refinement and culture into their homes and its latent spiritual and moral power into their minds and hearts, is a work second to none that can be undertaken by any government." Service to the people notwithstanding, the university is not to be considered as an arm of the state. "The members of the university staff must not be thought of in the ordinary way as state officers." Upon them depends the success of the university and independence is one condition of their success. Another is that they should not already be saddled with great reputations; they must earn their reputations while they make the university: "it is from the young men of promise and learning of the continent that our staff has been selected. I will ask you to judge them by their work." Up to this point, Tory had sketched, in fully modern (i.e. secular) fashion, the plan he was to implement faithfully. Then comes an about turn. "The power to appreciate the truth is God's greatest gift to man." He continues. "Did I say materialism was dead?...We who teach may be called idealists. Let me say to you that the idealist still lives and lifts his head to the stars and declares the impossible can be accomplished. All the ages of progress have been his ages and when the spirit of a material age is dead and the philosophy of materialism is forgotten the idealist will still be conquering the world." Tory was not a rigorous philosophical thinker and it did not occur to him that he was using "idealism" in quite different senses in the same paragraph. The loose, colloquial sense is obvious in context; that he also meant idealism in the sense of philosophical opposition to materialism is supported by rough notes made in preparation for the address. "Search for knowledge is a search to discover God's Law. All scientific research whether carried on in the abstract or concrete has a definite relation to human life. How can a man know the law of God." At this juncture, he had not made the distinction between knowledge and belief, nor had he separated the sacred from the secular. Meanwhile, his restless energy took him at once in several directions.

The central academic structure of the University was in place by 1915. It was an astonishingly rapid accomplishment for the time, all the more remarkable for the constitutional hurdles which had had to be cleared. The University had

come into being under a provisional Act passed by the first session of the legislature of the new province. Tory was meeting the same problems as had been overcome by the work of the 1906 Commission at Toronto. As Sydney Woods, then provincial Deputy Attorney General, was familiar with the work of the Toronto Commission, he and Tory used its Report for drafting a new act for Alberta, except for the federating provision which was unnecessary. The major variations introduced in the Alberta bill were an integrated agricultural school and university power to examine for the professions. The latter was required because the legal and medical professions had gone their own ways before the coming of the University and were not disposed to let go of any part of their self-regulation, including training by apprenticeship. A permissive clause under the Act enabled the University to negotiate agreements with professional associations for educational standards. (Rearguard delay by physicians held the Faculty of Medicine back until 1919).

With the Act firmly in place, Tory turned his attention to taking the university to the people, through extension activities and by research and development work. It was unusual among academic circles to find two such different emphases coming from the same person. In his mind they formed part of the same bundle of service to the people; his tendency to philosophical confusion was only the underside of exceptional generosity to ideas and sensitivity to change. He had been struck by the vigour of the Workers Educational Association when in Oxford during the summer of 1908, and, already conditioned by his own youthful experience as well as by the tradition of social mobility built into Scottish-inspired education, was ready to announce the popular cause as his own by the time of his inaugural address. In 1912 he was ready to put his ideas in practice by creating a Department of Extension Services, with A.E. Ottewell as its first director. Ottewell had just graduated in honours classics, one of Alberta's own, and was on his way to a Methodist ministry. Tory got there first. Shortly after, E. A. Corbett was appointed as an assistant, later to become a significant figure in adult education (and Tory's biographer: see Appendix). Although extension work had been an ongoing activity elsewhere for some time (e.g. at Queen's), Alberta's Extension, with its crusading enthusiasm into which many of the faculty were drawn, became the byword for adult education. Tory's efforts to set up a parallel organization, the Industrial Laboratory, for applying technical expertise to industrial problems did not achieve much. He soon recognized that these problems were not amenable to ready application of existing knowledge: considerable research would be needed in most cases before development could proceed. Opposition from his "people" , government reluctance

to supply additional funds and, most of all perhaps, lack of trained researchers hindered progress. Nevertheless, the Scientific and Industrial Research Council of Alberta (in which the Industrial Laboratory had been merged) was a going concern by the 1920's. By then Tory was getting ready to move on.

The progress of Alberta's university set an example to the other western provinces. The making of the University of Saskatchewan, founded a year later, was virtually a repeat performance except for an initial stress on agriculture. The founding president, Walter Murray (former professor of philosophy at Dalhousie) looked upon his fellow Nova Scotian as a senior colleague and turned to him for guidance.[10] In British Columbia, the provincial university replaced McGill B.C. in 1915, but was hampered by inadequate facilities for another decade. The University of Manitoba provides an interesting contrast to the others. In spite of a charter granted in 1877, teaching had been confined to autonomous denominational colleges until 1904, when university teaching of science began under pressure from physicians and would-be professionals. The growth of science teaching outside the denominational colleges raised in principle the question whether the arts should be divorced from religious teaching and surrendered wholly to the secular state. By 1907, "the university, with the beginning of instruction in engineering, was well on its way to becoming a typical university of the twentieth century, a university with the arts and sciences at its centre, but with a great and growing circle of professional schools, designed to supply the professional skills needed by an increasingly technological society."[11] Unfortunately, strife within stood in the way. A Commission was appointed to resolve deadlock over the question of principle. The Commissioners conferred widely in North America, especially with members of the University of Toronto Commission, and its report was carefully studied. But the Commissioners continued to reflect the contending views which had caused their task and remained divided. There were the "traditionalists", wishing to retain within denominationalist colleges the exclusive teaching of arts (i.e. the classical curriculum); opposing them were the "secularists" seeking a sharp break with the past and the establishment of a secular, state-supported and state-controlled institution; while midway between the "evolutionists" urged an evolving partnership between the founding colleges and the state-supported faculties. Unable to resolve their differences after two years, the Commission presented three separate reports, one for each position. The impasse eventually caused a crisis as public funding mounted towards 60% of university revenue until it was resolved in 1917 by government action. The government imposed the principles of the University of Toronto Act of 1906 which had also served as the

model for the acts creating the provincial universities of Saskatchewn, Alberta and British Columbia.

Tory in Ottawa, 1928 and 1938

In 1928, aged 65, Tory retired from the University of Alberta, but only to give his full attention to the National Research Council, the presidency of which he had carried simultaneously with that of Alberta for the past five years. He had done all he had set out to do in Alberta except for the stumbling block of research capability, which could not be removed by provincial effort alone. It was a national problem and required a national solution. Efforts towards graduate work and research had achieved only feeble results, even at Toronto and McGill. "All state universtities" wrote Tory to McGill's principal in 1928," are still struggling with the problem of necessary funds to carry on anything but the most elementary teaching work, simply because government officers who have control to a certain extent of the amount of money voted are always watching to prevent anything being done that could have the slightest appearance of conflicting with their own ambitions." Principal Currie had complained that Tory's proposals for conducting industrial research and setting standards in NRC laboratories would divert potential funds from university research. Tory was pointing out that government money was unlikely to be available for university work regardless of his proposal. "The only way the Dominion Government, up to the present moment, has made any grants has been through the National Research Council and the grants there up to date have been exceedingly small. When I became President of the Research Council [six years after the Council had come into existence], it had reached a stage when the Government's opposition to it, expressed through its officials, was on the point of putting it completely out of business; simply because ordinary routine government authorities did not control the expenditure of the small sum of money available." In 1924, soon after taking office, Tory had piloted a revised Act which named the organization the way it is now, made him President instead of honorary chairman and put the Council at arm's length from government as a Crown corporation. That step eliminated petty interference from the mandarins but did not turn the government well into a gusher. A successful project to use Canadian ores for manufacturing the linings for steel furnaces, a gamble by Tory which had paid off handsomely, give him the leverage to sink home the point. The Research Institute which the Dominion Government had adamantly opposed was at last in sight, and Currie (and other university heads) were opposing him for mistaken reasons. Moreover, the NRC would be doing industrial research which

was not the business of universities. "I would never permit a university over which I presided being made a fifth wheel to an industrial coach. Our work after all is teaching and research. That is the reason why I am now backing the development of a Research Institute which will deal primarily with industrial problems. The question is a national one: it belongs to the national government or to the industrial organizations or both, jointly."[12] The truth of the matter was that Currie did have a point, but there wasn't enough money to go round and Tory had called the priorities correctly because the experiences of Germany, Britain, the U.S. and France had demonstrated that service-oriented national laboratories of the kind he was proposing were prerequisite to other research and development. In any case, Tory argued the universities' priority was to get the researchers trained. (To this end, the NRC had already given $350,000 for more than 400 graduate students and fellows in science for the past ten years, which had yet to pay off.) By that time only four universities (Manitoba, McGill, Queen's and Toronto) had become organized for graduate work and as yet only a handful of doctorates in science were being awarded (mainly at Toronto and McGill) each year.[13] The pace of research was to quicken only with the coming of war.

Tory's general views of the aims of science and the work of NRC are set out in his presidential address to Section III of the Royal Society of Canada in 1928.[14] He begins his address by pointing to the growing importance of university work for industrial health, reviews the development of research among a few of the leading industrial nations and compares Canada's with those developments, and concludes with discussion of policies for Canada. In retrospect, we can judge that Tory was very well informed about matters abroad because of his first hand observations. His survey of Japan, then virtually ignored by western nations, was perceptive and ended with the following comment. "Without question the industrial nations of the west will, in the near future, find the Japanese nation one of the greatest competitors in the markets of the world, while nations having a surplus of food products will find a ready market, which, however, can be entered only on a strictly competitive basis." (A major current project of NRC was the development of rust resistant wheat.) Turning to the Canadian situation, he reminds his audience that Canada stops short of being able to perform because there are so few trained researchers. He acknowledges that the universities are not wholly to blame because provincial governments have denied them the necessary support. The best undergraduates are leaving and the brain drain to the south must be stopped. "The N.R.C. may assist in providing means for special equipment and increase its grant for

scholarships; beyond this point, however, the responsibility must lie with the provinces. Here again it is respectfully suggested there is room for a coordinated effort on the part of our major universities for the purpose of promoting this idea." In concluding, keeping in mind the special character of his audience he admonishes them to respond to the cross-currents among the pure sciences and their cognate professions. "Let us not forget that in the advance of civilization the work done by the pure scientist, especially by the physicist and the chemist, has been and will remain fundamental in character. These fields, however, no longer occupy a place apart, each for itself. The future will call for more and more co-operative effort.... Physics and chemistry which were regarded a few years ago as mere training subjects in medicine, have now become fundamental. Without question the medical researches of the future, as in the immediate past, will lie largely in these fields, properly related to biology. [Then his credo.] The pure scientists of the future must see more largely, feel more deeply, and help more humanly than those of a by-gone age. The greatest days are yet to come."

The tone of Tory's talk is secular, its sweep global, its substance utilitarian. He did not expect such a position to be controversial because it had become commonplace by that time, particularly among the physical scientists who composed his audience. He had moved in viewpoint as well as in time since his inaugural address of 1908. He continued to believe in the connection of research with education and to regard both as simultaneously inspiring and utilitarian. There is no evidence for loss of religious faith, only less of a place for religion in matters of knowledge. The corpus of Tory's written work was in his speeches and addresses, many of which were published. In his autobiographical material he had begun to prepare a selected list of some fifty major speeches he considered typical of his advocacy of higher education and of the value of research. "Being of an argumentative turn of mind, I threw myself with glee into the struggle." The need to persuade public gatherings that spending on research was in their self-interest, he explained, "accounts for the vein of materialism which runs through" the speeches. He does not appear to have been aware that the "vein of materialism" carried more blood as the years wore on. One speech, which he considered important but did not publish, was his convocation address while accepting an honorary degree from Queen's in 1938.

"Mr. Chancellor, Dr. Wallace, Members of Convocation, Ladies and Gentlemen: there will always be those to whom new ventures in education, new subjects of study and research for new knowlege are foolish and unnecessary especially if usefulness is urged as favourable argument. This is more often

than not just an excuse for unwillingness to meet a new problem. On the other hand, there are those who think that our institutions are still too much permeated with ancient and medieval ideas and would eliminate most of the traditional material from university curricula. There is surely a happy mean between the two extremes upon which honest minded men will agree....Personally I think our modern universities, to use the expressive phrase of Henry VIII, "have the right sow by the ear" when they plant the great modern schools of science in the midst of the old university courses permitting the friction of ideas to go vigorously on.... The modern university with its open door to every kind of higher intellectual endeavour is much to be preferred to that ancient idea of merely making a cultivated gentleman. External authority either ecclesiastical or political, should not for a moment be permitted to interfere on any grounds but such as commend themselves to reasonable men competent to speak with authority on the material under consideration."

After making due allowance for convocation rhetoric, we should note that Tory was not saying something that his audience would take as trite. The battle for secularization had been won all too recently. He himself was reiterating in 1938 the wholly secular outlook of his presidential address of 1928. But that outlook was not altogether shared by members of his audience. The Dr. Wallace whom he addressed as Principal of Queen's had been his successor at Alberta. Wallace, after his own retirement, wrote the following credo. "Education is important. It is still more important that we find a consistent and satisfying explanation of the meaning of the universe, and of our purpose and ultimate destiny as human beings. As a scientist, I have not been able to convince myself that the marvellous articulation and adaptation both of living things and of inanimate nature can have come of itself or through the purely impersonal working of evolutionary laws alone. I feel that there is a mind beyond the visible processes, a fountainhead of all the love and beauty and goodness and truth which we as human beings so imperfectly reflect, a power that gives us freedom of choice, and an eternal hope. We call that power God." The sentiment would have appealed to William Dawson, though he might have raised his eyebrows over the insertion of "alone" after evolutionary laws and disputed the scientific basis of Wallace's geology. Wallace had made a distinction between explanation of scientific processes and explanation of the meaning of the universe which Dawson had not. A century spanned the beginning of Dawson's career at McGill and the end of Wallace's at Queen's. Both universities had changed enormously during the period but the men would have found each other altogether congenial, as they found Tory who provided the bridge between them. But Tory

was more inclined in his later years than Wallace to separate material things and sacred beliefs.

The secular mind need not exclude religious belief, and indeed, is comfortable with wide variation in the value attached to religion. But while Dawson had sought to connect religious belief and knowledge, both Tory and Wallace had come to accept their separation as a condition of modern scholarship. The intellectual transformation had occurred, however, within a common understanding of the vocational function of the university. Dawson, Tory and Wallace shared the ambition of making their universities useful to society through training for the professions and by providing expert services. Following the Great War that ambition had become widespread, along with the realization that it could be fulfilled only with state support.

The Cash Value of Secularization

From their beginnings the Universities of Alberta and Saskatchewan had been supported by provincial funds. The situation was somewhat more complex in British Columbia and Manitoba, but by their respective acts of 1915 and 1917 their governments had acknowledged responsibility for supporting the provincial universities. However, the situation in Ontario remained ambiguous until a new Commission was appointed in 1920 to advise the government on appropriate financing for the provincial university and as well for Queen's and Western as regional universities.[16] Queen's had become eligible for provincial support in 1912 after a decade-long struggle for disengagement from the Presbyterian Church.[17] Since 1914, Arts and Medicine had been receiving support in addition to Mining. Similarly, Western had been receiving provincial money, after it gained independence from the Anglican Church, for Public Health (since 1910) and for Arts and Medicine (since 1916).[18] However, rapidly rising costs because of climbing enrolments compounded with inflation were causing growing deficits. At Toronto, the deficits, from which the University was bailed out repeatedly by the treasury, were beginning to equal the annual grants. Such ad hoc arrangements were only prolonging a crisis. The Report of the Commission on University Finances might easily have been written in 1951 instead of 1921. Its concerns, its style, its assumptions and its recommendations are thoroughly modern, and, as will be seen shortly, the crisis it faced was to be replicated by 1951. The briefs presented by the three universities also are like rehearsals for the 1950's. Two concerns addressed by the Commission, new then but as familiar as leaky boots today, were government supervision of the universities as a system and the need for graduate work and research. Among the many recommendations on

supervision were that, for the sake of a well-balanced provincial system, there should be general control of university expansion by government, including the establishment of new faculties, new buildings, and new colleges (the latter only in affiliation with existing universities.)

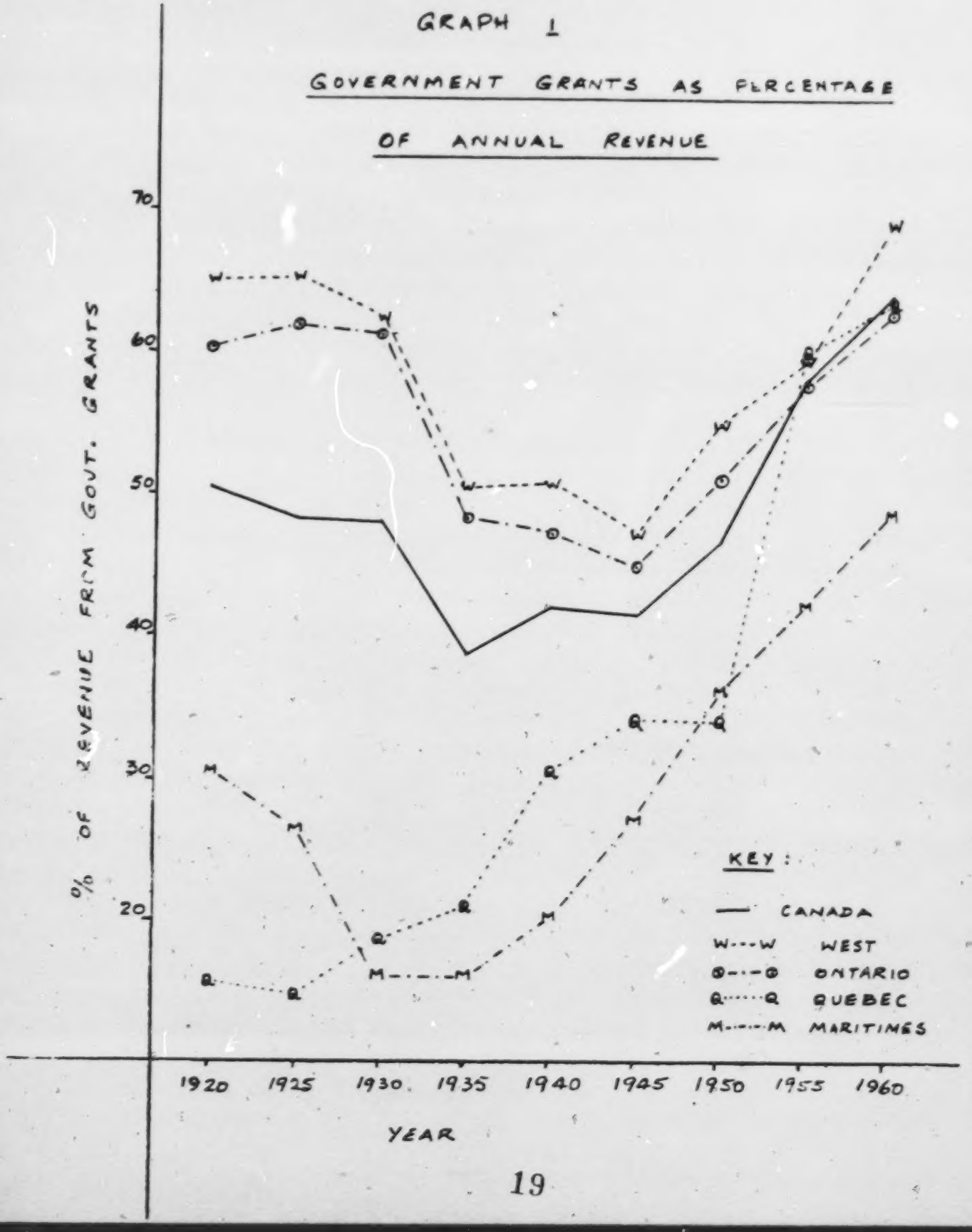
On research and graduate work, the Commissioners provided a case which if taken as a model today would save countless hours of repetition in innumerable committees. The main points were that, in view of the modern university's two-fold task of passing on what was known and adding to the store of knowledge, all provincially-supported universities should do graduate work at least to the Master's level. To further this aim the government was urged to provide additional funds for staff whose explicit task would be research and also to support graduate students through scholarships. These were noble aims which remained largely unfulfilled.[19] Note the normative image of a university underlying the 1921 Commission Report. It was that of a university which should be fully-equipped for arts and science and selected professional faculties and should combine graduate work and research with undergraduate teaching; a liberal arts college should not stand on its own but "link up" with some university. At the turn of the century, that image would not have appealed to many, nor even made sense except to a few who had trained in Germany or the U.S. It was an ideal which had first caught on at McGill with university level professional schools in the 1890's and the establishment of graduate work during the 1900's. By 1920, Ontario and the western universities were on the same course, but could take it only with public funding.

A simple representation of public funding appears in Graph 1 . The graph shows the share of annual operating revenues from government sources (almost exclusively provincial) by five-year intervals from 1920 to 1960, for Canada and the four regions. It may be seen that the national line has a pronounced dip between 1930 and 1950 which is mirrored by the regional patterns, excepting Quebec. Also, Ontario and the West are well above while the Maritimes and Quebec are well below the national average. In Ontario and the West governments provided generous shares of income until the onset of the Depression; government support was then cut back, while fee increases, restrained by fear of overpricing, provided only a partial offset to income loss; during the late 1940's veteran education gave an ephemeral boost to revenues. In Quebec, the situation was altogether different because the main support for Laval and Montreal came from the church in services and money, while McGill got by on the strength of its generous endowment and the continued benefaction of its alumni.

The Maritime institutions had become accustomed to hand-outs from the

GRAPH 1

GOVERNMENT GRANTS AS PERCENTAGE OF ANNUAL REVENUE



Carnegie Foundation when it decided, in 1921, to review their situation before granting any more money. William Learned, the Foundation's representative and Kenneth Sills, President of Bowdoin College, were asked to examine higher education in the Maritimes and to recommend policies for further funding. They reported that only Dalhousie could make a reasonable claim to be considered a university, while New Brunswick, though nominally a state institution, was so poorly supported that it was little better off than the denominational colleges. Indeed, only Nova Scota Technical College was properly equipped to carry out its limited task. If the Maritimes were to become equipped to provide a satisfactory modern education for their people, some reduction would have to be made in the number of "universities". Three possibilities were considered by the reviewers. Differention, so that each would concentrate on one area of study, was rejected because it would offend denominational sympathy which was the main support of the institutions. Selection of a particular institution - Dalhousie - for exclusive support would not work because it would rouse too many jealousies, regional and denominational. The third possibility, confederation on the models of Toronto and Manitoba, was the obvious choice, which Learned and Sills were prepared to back with Foundation money. The circumstances were propitious because of the movement towards church union, as well as the poor physical condition of the institutions.[21] The Foundation offered $3,000,000 if the colleges (the University of New Brunswick excepted because it was a "state" institution), would federate as the University of the Maritimes. Only Dalhousie and King's College, Windsor, benefited from the offer, the others rejecting the proposal, partly because they were deceived by temporary prosperity[22].

In 1951, Federal intervention staved off disaster. By 1956, the year of "Canada's Crisis in Higher Education", universities across the country had begun to bask in public favour. Their golden age had begun.

Discussion

Secularization is a complex historical process involving intellectual and social elements which are notoriously difficult to pin down.[23] In following the development of Tory's mind, one observes no dramatic break, only a slow shift to a settled position where faith and knowledge have become distinct and a sense of pastoral mission has been replaced by a more diffuse humanistic concern. During the course of the two decades while he was at Alberta, the aim of the classical curriculum (the training of mental and moral faculties) was pushed more and more into the background by diverse scholarly and professional goals. Scientific method, whether by laboratory experiment or by empirical technique,

came into prominence. The complement of internal diversity was the plurality of services the university provided to society.[24] The underlying basis of both internal goals and external services was utility as was the re son for state support.

These features were neither original nor peculiar to Alberta, or to Canada: they had come to be generally characteristic of secular universities in western civilization from the middle of the nineteenth century onwards under the leadership of first French and next German scholars. Widespread social need had brought in new professions. What made the Canadian experience unique was its uniformity. Starting from a few small institutions anxiously practical in outlook, the path of secularization was delimited by utilitarian and manpower requirements. Its course was swift because there was no indigenous academic tradition of sufficient strength to oppose it. The new aims did not exclude intellectual pursuits, but they discouraged broadly-based education for personal development, i.e. the "liberal arts" ideal.[25] The effect was as if early enclosure of virgin land had precluded a commons. And one university domain came to look like another.

The homogeneity of Canadian higher education has often been remarked upon but never explained. For instance,during the 1956 Conference on "Canada's Crisis in Higher Education", Sidney Smith drew a group portrait of English Canadian universities with strikingly common features: arts and science allied to professions, general dispersion of research; most importantly, a virtual absence of single-purpose institutions.[26] The group portrait bore a strong resemblance to the normative image of a university drawn by the 1921 Commission on University Finances. Peter Leslie, after extensive study, has very recently drawn attention again to their family likeness.[27] There are now even fewer exceptions to the norm after the second wave of expansion and secularization (1955-1975)) than there were after the first one (1900-1925). I have attempted to explore in this essay how the normative self-image has arisen and has come to prevail among Canadian universities. An understanding of these historical antecedents may help to avoid futile discussion of the kind which took place during the OECD Review of Canadian education.[28]

It is time to recapitulate the main argument. The religious but practical origins of English Canadian universities and the relative rapidity of their secularization combined to give rise to a homogeneous idea of what a university should be and do. The timing was crucial because contemporary developments in the U.S. and U.K. served as powerful models.[29] Inclination was reinforced by the need to justify public funding (or elicit generous private support at McGill and

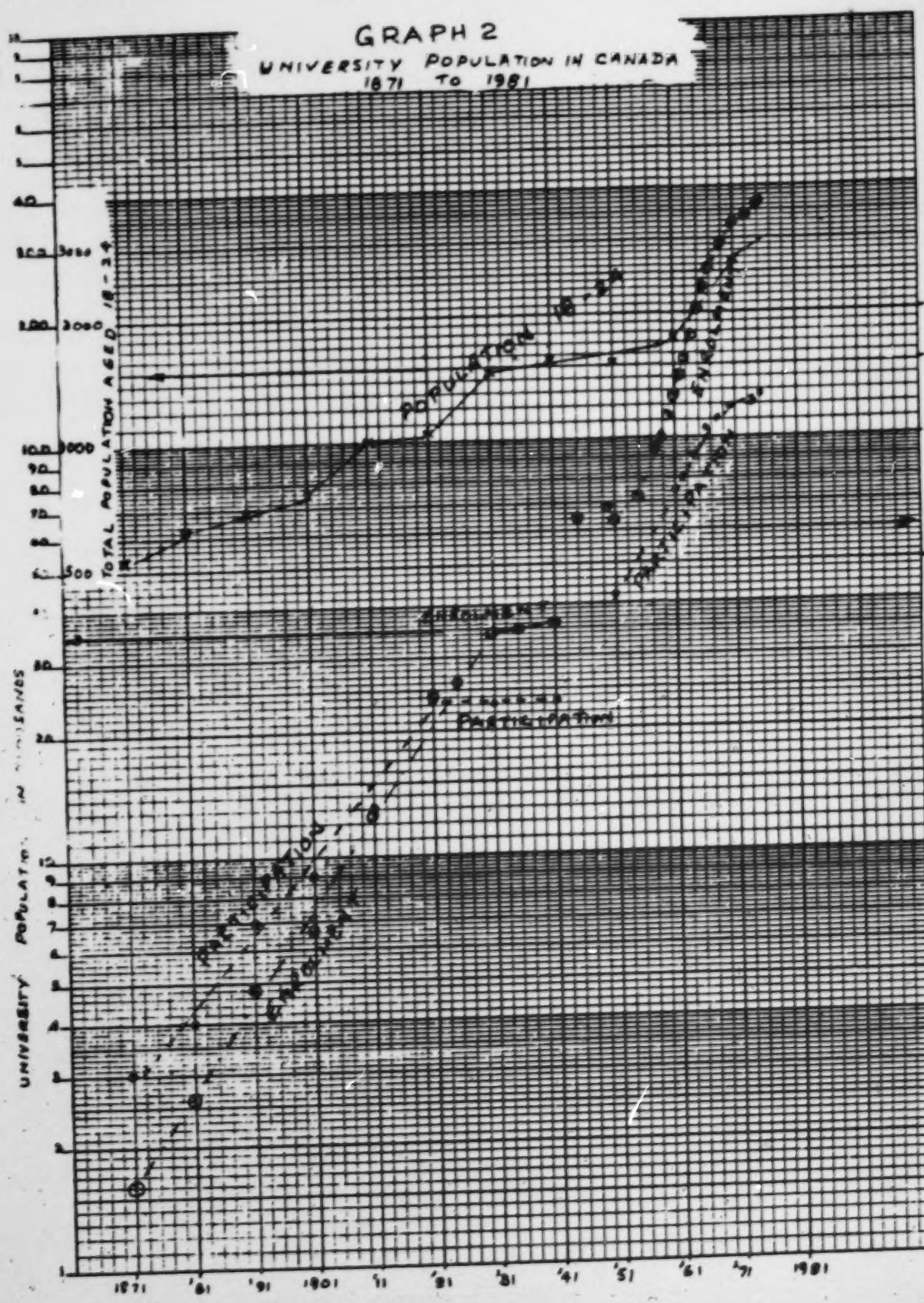
Dalhousie). Moreover, provincial autonomy in education further reinforced this homogeneity because each province tended to borrow from, or yielded to comparison with, the momentary leader. The general aims of English Canadian universities have long since been set - a recitation of objectives today is only a comforting ritual, no longer a sign of new ambition. A shared self-image guides the universities along a common route; their watch over one another keeps them packed close.

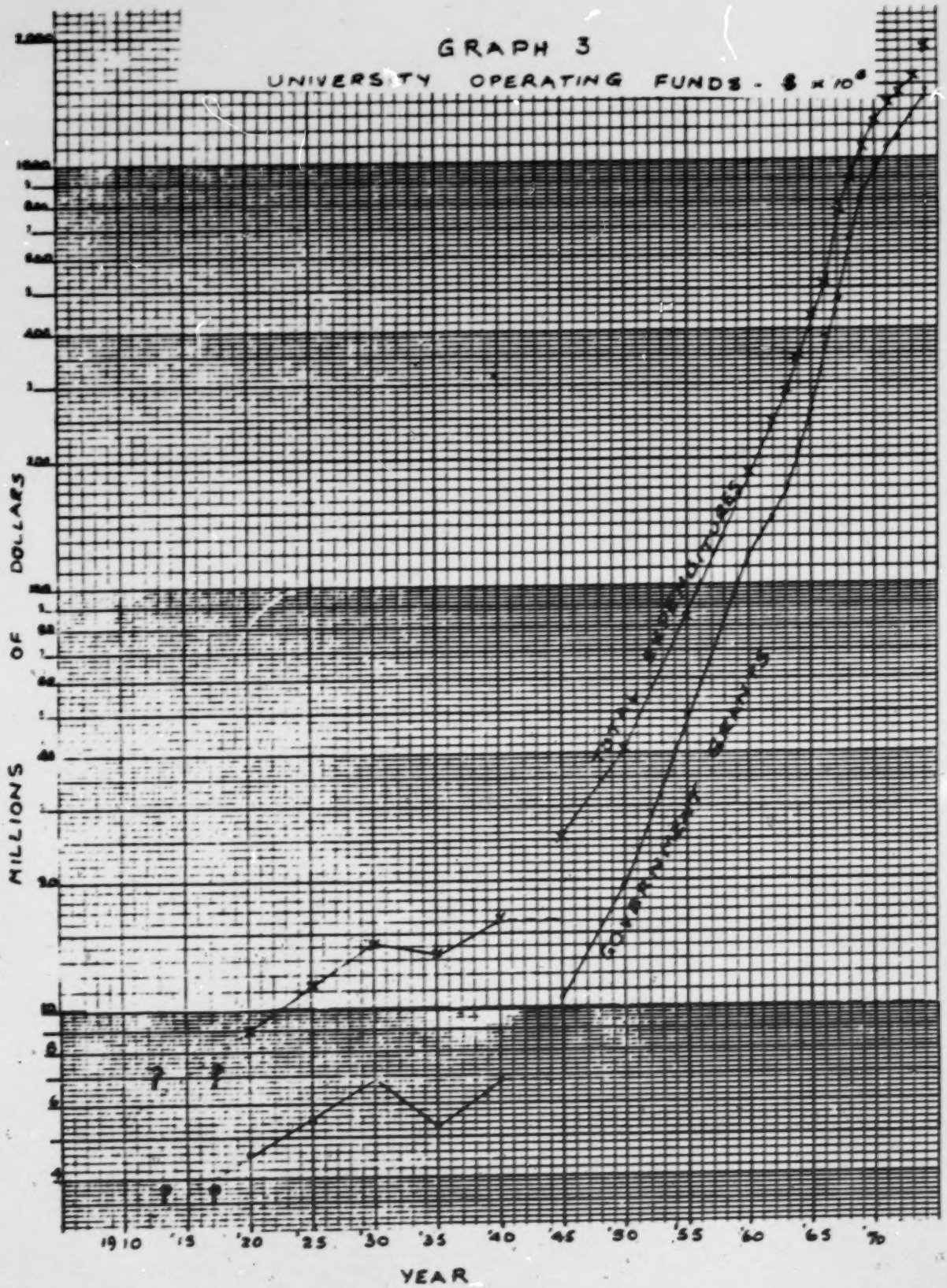
APPENDIX

Yardsticks, 1870 - 1970

Graph 2 shows decennial enrolments of full-time students from 1871 to 1975, and also relates these numbers to the size of the population aged 18-24.[30] The numbers tend to become less reliable as one recedes into the past, partly because of casual record-keeping and partly because structural changes cause the numbers to alter their meaning. Nevertheless, given the hundredfold increase over the century, we need have no misgivings over making broad comparisons. Ignoring short-term fluctuations (e.g. during World War I) there is a rapid long-term rise of enrolments from Confederation to Depression. Participation in university rises until the 1920's almost parallel to enrolment and much faster than population, i.e. enrolment growth has been caused more by social than by demographic change. Enrolments flatten during the Depression and war years, rise while veterans crowd the universities and begin to fall again before the expansion crisis which begins in the mid 1950's. Sheffield's original projections proved to be remarkably prophetic and the dizzy climb of the 1960's brings us to the recent past. Participation rates climb again, for about two decades after 1955. We should note that the rise in participation around the turn of the century was as rapid as the recent one.

In Graph 3 I have plotted total university operating expenditures and government grants from 1920 to 1970 at five-year intervals.[31] Between 1920 and 1950 grants were from provincial sources. During the 1920's about half the revenues came from grants; thereafter government support fell sharply during the Depression and picked up only in the late 1930's. Note that I have not joined the lines between the years 1940 to 1945 because wartime conditions distorted university incomes. In 1951, the Federal Government, adopting the recommendations of the Massey Commission, started to make general grants to universities, and after 1956 revenues from government sources climbed even faster than enrolments. This graph therefore directs our interest to the period before 1920.


GRAPH 2
UNIVERSITY POPULATION IN CANADA
1871 TO 1981
TOTAL POPULATION AGED 18-24
UNIVERSITY POPULATION IN THOUSANDS
PARTICIPATION %
POPULATION 18-24
PARTICIPATION
1871
'81
'91
1901
'11
'21
'31
'41
'51
'61
'71
1981
YEAR


GRAPH 3
UNIVERSITY OPERATING FUNDS - $ x 10^6
MILLIONS OF DOLLARS
FULL-TIME EQUIVALENT STUDENTS
GOVERNMENT GRANTS
1910
'15
'20
'25
'30
'35
'40
'45
'50
'55
'60
'65
'70
YEAR

Estimates have been made of expenditures based on sample institutional accounts, but the grant portion remains problematic because the idea of sustained provincial support for universities was put in place only in the early 1920's, and before then government grants were fitful and meagre.

Unlike the boom of the 1960's, the boom of the 1900's caught universities and government unawares. The universities were moving uncertainly into new programs, mainly vocational (e.g. engineering, agriculture and forestry), as well as beginning to teach science on the basis of laboratory methods. Moreover, training for medicine was being transformed by the direct application of the bio-medical sciences which meant that medical schools could no longer remain self-supporting or proprietory. These changes have not been analysed quantitatively. However, a useful indicator can be constructed from the lists of degrees conferred during this period. Shown in Table 1 are first degrees (there were few others) conferred by six selected universities and total degrees in the three decades. Before 1890 few degrees were conferred for programs other than Arts (including science), Law and Medicine. (Theology has been excluded). By 1900, some 17% of degrees were in programs other than these three, the most significant shifts being to engineering at McGill and agriculture at Toronto, in the Ontario Agricultural College at Guelph. Between 1900 and 1920, more degrees were earned in engineering than in arts at McGill; l'Ecole Polytechnique (then affiliated with Laval at Montreal), Queen's and Toronto also experienced enlargement of engineering; engineering as a percentage of all degrees rose from 5 to 12 to 16% during 1891-1900, 1901-1910 and 1911-20 respectively, surpassing medicine during the last decade as the most frequently conferred professional degree. The start made in engineering at Dalhousie was stopped by the restriction of all engineering work in Nova Scotia to the newly-created Technical College. Manitoba was little more than a federation of autonomous denominational colleges until near the end of this period and hence could not respond adequately to the new demands.

The growth of university enrolment along with the entry of new vocational programs over the period 1871 to 1970 is shown in Table 2, which in effect is a combination of Graph 2 and Table 1. In 1871, total university enrolment was below 2,000, two-thirds of which was in theologically-oriented arts and science, with the remaining third in affiliated medical schools, (law training consisting mainly of articling). By the turn of the century, agriculture and engineering were attracting significant numbers of students while arts and science was falling to less that half the total. Within another two decades commerce, education and household science were making their debut as professions, and

TABLE 1

First Degrees Conferred by Canadian Universities[1]
1891 - 1920

UNIVERSITY	1891-1900						1901-1910						1911-1920					
	ARTS[3]	LAW[4]	MEDS	ENG	OTHER[5]	TOTAL	ARTS	LAW	MEDS	ENG	OTHER	TOTAL	ARTS	LAW	MEDS	ENG	OTHER	TOTAL
A: Percentage of program within each university																		
Dalhousie	56	30	14	-	-	100	55	20	21	4	-	100	57	20	17	-	6	100
Laval[2]	55	23	15	5	2	100	58	11	17	14	-	100	34	11	13	16	26	100
Manitoba	70	3	27	-	-	100	61	10	29	-	-	100	52	12	19	4	13	100
McGill	26	6	41	19	8	100	23	5	41	30	1	100	30	7	24	31	8	100
Queen's	53	2	43	2	-	100	51	-	30	19	-	100	64	-	15	21	-	100
Toronto	46	4	18	2	30	100	38	2	25	8	27	100	43	1	14	17	25	100
All Others	54	3	37	1	5	100	67	2	21	5	5	100	77	4	7	7	5	100
All Universities	48	7	28	5	12	100	47	5	26	12	10	100	49	5	15	16	15	100
B: Percentage of program awarded by university*																		
Dalhousie	6	22	3	-	-	5	5	19	4	1	-	5	4	13	4	-	1	3
Laval[2]	14	35	6	14	2	12	15	27	8	14	-	12	9	28	11	13	22	13
Manitoba	9	2	6	-	-	6	8	12	6	-	-	6	9	20	11	2	7	8
McGill	9	14	23	63	11	16	8	17	24	40	2	16	8	18	22	27	7	13
Queen's	7	2	10	2	-	7	11	-	11	16	-	10	13	-	10	14	-	10
Toronto	29	15	20	16	78	31	28	17	32	22	90	34	30	9	34	36	37	35
All Others	26	10	32	5	9	24	25	7	14	7	8	10	27	12	8	8	5	17
Total Degrees	4817	738	2792	462	1166	9975	6004	647	3408	1521	1314	12897	8550	817	2535	2698	2666	17326

NOTES: 1. Excluding theology. 2. Laval includes both Quebec and Montreal. 3. Arts includes B.A., B es L., and B.Sc. 4. Law degrees exclude Osgoode Hall. 5. "Other" degrees are mainly for pharmacy, agriculture and dentistry.

SOURCE: Derived from H.S. Harris: History of Higher Education, pages 612-621

*read vertically

TABLE 2

UNIVERSITY ENROLMENT BY FIELD[1]: 1871 - 1970: IN THOUSANDS

	1871	1881	1891	1901	1911	1920	1930	1940	1950	1960	1970
ARTS & SCIENCE	1.0	1.7	2.5	2.9	5.8	9.7	17.3	18.2	31.2	53.7	160.1
%	63	57	49	43	45	42	55	52	49	50	58
AGRICULTURE[2]	-	0.1	0.3	0.4	0.9	1.0	1.0	1.6	2.2	2.3	4.4
%		3	6	6	7	4	3	5	3	2	2
COMMERCE	-	-	-	-	-	0.4	0.9	1.2	3.4	6.5	16.7
%						2	3	3	5.5	6	6
EDUCATION	-	-	-	-	0.5	0.2	0.7	0.8	2.8	11.6	38.5
%					4	1	2	2	4.5	11	14
ENGINEERING	-	0.05	0.3	0.7	2.2	3.0	3.6	4.7	9.6	16.1	25.7
%		1.5	6	11	17	13	11	14	15	15	9
LAW	0.1	0.25	0.5	0.5	0.7	1.1	0.8	0.7	2.4	2.5	7.3
%	6	8.5	10	7	5	5	3	2	4	2	2.5
MEDICINE ET AL.[3]	0.5	0.8	1.5	2.1	2.2	5.2	4.1	4.3	8.3	9.0	16.3
%	31	27	29	31	17	23	13	13	13	8	6
OTHERS[4]	-	0.1	-	0.1	0.6	2.2	3.2	3.2	4.1	5.5	7.3
%		3	-	2	5	10	10	9	6	5	2.5
TOTAL	1.6	3.0	5.1	6.7	12.9	22.8	31.6	34.8	64.0	107.2	276.2

NOTES: 1. Full-time (excludes graduate). Source - Statistics Canada 81-568, Table 23 (Rounded).
2. Includes Veterinary Medicine.
3. Includes other health professions, e.g. dentistry, nursing, pharmacy.
4. Includes theology & household science.

other health practitioners were following physicians into the university. This pattern of emergence of new universitybased professions was to continue throughout the twentieth century (persisting to the present day). Meanwhile, arts and science maintained its share just below half throughout (with two exceptions), despite size increases and vocational innovations. At two points, 1930 and 1970, arts and science rose above the half-way mark; the 1930's and the decade around 1970 were periods of intense evaluation of society which tilted the balance from utility towards curiosity. Once data for 1980 become firm, it will be seen that arts and science will have been restored to the customary share, just below half.

Notes

My source of information for Tory is the collection of his private papers at the Public Archives of Canada. The PAC collection contains a manuscript of his autobiography which was not quite completed. The biography by E.A. Corbett, Henry Marshall Tory: Beloved Canadian (Toronto, Ryerson Press, 1954) is almost a copy of the manuscript, except that Corbett muted the text where it dealt with controversy or seemed to diminish his idea of what Tory should have lived up to. Tory was ambitious, relished argument and enjoyed the role of public speaker for education and research. In another culture he might have been a "robber baron". In Corbett's book he comes through as a "statesman of higher education". To arrive at a fresh perspective, I have drawn my interpretation from the PAC collection. All Tory's quotes are from the PAC collection, except when taken from a published document.

Robin Harris' History of Higher Education in Canada 1663-1960 (University of Toronto Press, 1976) was an indispensible starting point for this paper. I have refrained from indicating all the many places where the book corroborates my statements. Statistics Canada's Historical Compendium of Higher Education, 81-568 (Ottawa, 1978) is also essential for quantitative information. The notes indicated in the text follow.

1. D.C. Masters: Protestant Church Colleges in Canada (University of Toronto Press, 1966).

2. L.K. Shook: Catholic Post-Secondary Education in English-Speaking Canada. (University of Toronto Press, 1971).

3. S.B. Frost: McGill University Vol. 1 1801 - 1895 (McGill-Queen's Press, 1980).

4. H.M. Tory, editor: A History of Science in Canada (Toronto, Ryerson, 1939). p. 1.

5. A.B. McKillop: A Disciplined Intelligence: Critical Inquiry and Canadian Thought in the Victorian Era. (McGill - Queen's Press, 1979).

6. W.S. Wallace: A History of the University of Toronto, 1827 - 1927 (University of Toronto Press, 1927). pages 212 - 216.

7. H. Neatby (edited by F. Gibson and R. Graham): Queen's University, Vol. 1, 1841-1917 (McGill-Queen's Press, 1978.

8. Report of the Royal Commission on the University of Toronto, (Toronto, King's Printer, 1906).

9. The University of Toronto Act 1906 is examined in several works among which are: W.S. Wallace : A History of the University of Toronto, 1827 - 1927 (University of Toronto Press, 1927); R.S. Harris, "The Establishment of a provincial University in Ontario" in D.F. Dadson, editor, On Higher Education: Five Lectures (University of Toronto Press, 1966); F.C.A. Jeanneret, "The Contribution of Sir Robert Falconer to Higher Education", ibid.; C.W. Humphries, "James P. Whitney and the University of Toronto" in Profiles of a Province (Ontario Historical Society, 1967).

10. A.S. Morton: Saskatchewan: The Making of a University (University of Toronto Press, 1959).

11. W.L. Morton: One University: A History of the University of Manitoba, 1877 - 1952 (Toronto, McLelland and Stewart, 1957). p. 74.

12. M. Thistle: The Inner Ring: the early history of the National Reasearch Council of Canada (University of Toronto Press, 1966). p. 293-4.

13. W.P. Thompson: Graduate Education in the Sciences in Canadian Universities. (University of Toronto Press, 1963). p.31.

14. H.M. Tory: "Work and Aims of the N.R.C.", Transactions of the Royal Society of Canada, Third Series, Vol. 22, pages 165 - 178.

15. R.C. Wallace: "As I look back", Queen's Quarterly, Vol. 61, p. 496.

16. R.S. Harris. "The Evolution of a Provincial System in Ontario", in D.F. Dadson, editor: On Higher Education. p. 36 - 62.

17. H. Neatby, op. cit., ch. 14.

18. Report of the Royal Commission on University Finances (Toronto, King's Printer, 1921). p. 29.

19. W.P. Thompson: Graduate Education in the Sciences. Chapter 2.
J.B. Brebner: Scholarship for Canada. (Ottawa, 1945).
J.B. Conacher: "Graduate Studies in History in Canada", Canadian Historical Association, Papers. 1975, pages 1 - 2.

20. Statistics Canada: Historical Compendium of Education Statistics. #81-568. (Ottawa, 1978). Table 30.

21. W.S. Learned and K.C.M. Sills: Education in the Maritime Provinces of Canada. (N.Y., Carnegie Foundation, 1922).

22. W.S. MacNutt: "The Universities of the Maritimes - A Glance Backward", Dalhousie Review, 1973. pages 431 - 447.

23. See, O. Chadwick: The Secularization of the European Mind in the Nineteenth Century (Cambridge University Press, 1975), for a thorough discussion of the problem of "secularization".

24. R.C. Wallace: "The University of Alberta, 1908-1933." (A twenty-fifth year review, circulated in 1933.)

25. In Search for an Ideal: six Canadian intellectuals and their convictions in an age of transition, 1890 - 1930 (University of Toronto Press, 1976), S.E.D. Shortt describes six academics whose ideas of education were outmoded by the changes which had become evident by the 1920's. Without doubt, four of them (Andrew Macphail, Archibald MacMechan, James Cappon and Maurice Hutton) were out of place in the new world. It is significant that they were long time members of McGill, Dalhousie, Queen's and Toronto, respectively, and with some influence, but not a lasting one.

26. Canada's Crisis in Higher Education, p. 8. (University of Toronto Press, 1957), Edited by Claude Bissell.

27. P.M. Leslie: Canadian Universities, 1980 and Beyond. (Ottawa, AUCC, 1980). p. 65.

28. The Canadian situation is puzzling unless one has examined these antecedents. Certainly, it puzzled the examiners who conducted the OECD review. (Organization for Economic Cooperation and Development: Reviews of National Policies for Education: Canada. Paris, 1976.) They complained, on the one hand, that Canadian universities (excepting those of Quebec) were too pragmatic and noted, on the other hand, that Canada had been exceptionally successful in achieving educational reform without much fuss. It did not occur to them, nor to their Canadian informants, that there was no contradiction between the lack of a "National Policy" for higher education and the uniform result they were observing.

29. A crucial factor which, for reasons of space, I have not developed here is the timing of university development in Canada. By the turn of the century, professionalism and its attendant university specialisms was already well under way in the U.S. Burton J. Bledstein: The Culture of Professionalism (N.Y. Norton, 1976); Christopher Lasch: Haven in a Heartless World (N.Y. Basic Books 1976); David F. Noble: America by Design (N.Y. Knopf, 1977). Also Robert Church: "Economists as Experts" in Lawrence Stone, editor: The University in Society. Volume 2. (Princeton University Press, 1974. In Britain, similar changes occurred in conjunction with growth of "redbrick" universities; M. Sanderson: The Universities and British Industry, 1850-1970 (London Routledge and Kegan Paul, 1972).

30. Statistics Canada: Historical Compendium of Education Statistics, p. 16-17.

31. Ibid: Table 30.